Course Type	Course Code	Name of Course	L	T	P	Credit
ESO	ESE 202	Pollution Control and Management	3	0	0	9

Course Objective
• To develop understanding of atmospheric science including quantifying climate sensitivity to changes in greenhouse gases and interrelation between the various components of the climate system
Learning Outcomes
• The students will be able to know the basics of atmospheric science and climate change. • They will develop a broader awareness of current methods and areas of research in climatology. • They will also assess current and future climatic risks.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	**Air pollution:** Fundamentals of air pollutants and impact, ambient air monitoring, emission factors; overview of prediction models, air pollution control techniques, suppression and consolidation of dust **Noise Pollution:** Fundamentals of Noise Pollution and Impact, monitoring and control measures.	12	The students will be able to learn about air and noise issues with respect to the industries, they will serve. They will also learn how to improve the environmental conditions.
2	**Water pollution:** Global hydrological cycle: self-purification mechanism, sources of water pollution, water quality parameters and standards, Eutrophication, acid mine drainage and heavy metal pollution- preventive and control measures. Design and operation of wastewater treatment plant	12	The will be able to learn about the water pollution and treatment methodologies.
3	**Solid waste Management and** Land **degradation** due to industrial activities, physical and biological reclamation.	5	The will be able to learn about the solid waste management and land degradation arising out of such industrial activities
4	**Land Acquisition & Revenue**: Concepts, Related laws and regulations **Corporate Social Responsibility:** Concepts and principles, Rehabilitation and Resettlement issues, Social Impact Assessment.	5	The will be able to learn about the Land acquisition methods, the Corporate Social Responsibility of the industries.
5	**Environmental Laws and administration**; Overview of Environmental Laws, Environmental clearance procedures and Environmental Impact Assessment process, Environmental Audit, Sustainable development, environmental carrying capacity- concepts & principles.	8	The will be able to learn about Environmental Laws and administration applicable in India and other countries**.**

Text Books

- Introduction to environmental engineering (5th edition) by Mackenzie L Davis and avid A Cornwell (2014). Mc Graw Hillpublishers.
- S.C.Bhatia (2001), Environmental Pollution and Control in Chemical Process Industries, Khanna Publishers, New Delhi.

Reference Books

- R.C Gupta (2012), Energy and Environmental Management in Metallurgical Industries, PHI Learning Pvt. Ltd.